

# Research on the Evaluation and Promotion Paths of Henan Province's Traditional Chinese Medicine Export Competitiveness

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**Abstract:** The traditional Chinese medicine (TCM) industry is a traditional advantageous industry in Henan Province, boasting profound cultural heritage and prominent resource endowments. Against the backdrop of the global upgrade in health concepts and the accelerated internationalization of traditional Chinese medicine, Henan's TCM exports face both opportunities and challenges. Based on Henan's TCM export data from 2018 to 2023, this paper conducts a quantitative evaluation of its export competitiveness using the Trade Competitiveness Index (TC), International Market Share (MS), and Revealed Comparative Advantage Index (RCA). The study finds that the overall export competitiveness of Henan's TCM shows an upward trend, but the exports are still dominated by raw materials, with insufficient international recognition of proprietary Chinese medicines. Accordingly, this paper proposes countermeasures from four aspects: strengthening the international promotion of proprietary Chinese medicines, breaking through international regulatory barriers, optimizing the export structure, and promoting the transformation towards high value-added products, so as to facilitate the high-quality development and internationalization of Henan's TCM industry.

**Keywords:** Competitiveness indexes; Henan Province; Internationalization strategies; Traditional Chinese medicine (TCM) exports

**Online publication:** December 15, 2025

## 1. Introduction

As a birthplace of traditional Chinese medicine (TCM) culture and a major resource-rich province, Henan's TCM industry plays a crucial role in rural revitalization and the supply-side structural reform of agriculture. The Report to the 20<sup>th</sup> National Congress of the Communist Party of China clearly proposes to "promote the inheritance, innovation, and development of traditional Chinese medicine," providing policy guidance for the internationalization of TCM. However, Henan's current TCM exports are still dominated by primary products with low added value, and their international competitiveness needs to be improved. In this context, systematically

evaluating its export competitiveness and putting forward targeted promotion strategies are of great practical and strategic significance.

## 2. Current development status of the internationalization of TCM materials in Henan Province

Henan Province has accumulated a profound cultural heritage and a long historical inheritance in the development of TCM. The history of artificial medicinal material cultivation in the province dates back more than 3,000 years. Regions such as the Dabie Mountains, Funiu Mountains, and Taihang Mountains within its territory are rich in diverse medicinal resources, known as the “Natural Treasury of Chinese Medicinal Materials,” which has laid a solid resource foundation for the development of its TCM industry. Entering the new era, Henan Province has actively aligned with the national TCM development strategy. The 13<sup>th</sup> Five-Year Plan for the Development of Traditional Chinese Medicine in Henan Province issued in 2017 clearly proposes that by 2030, the province will be built into a strong TCM province, promoting TCM enterprises to “go global,” with a focus on carrying out traditional medicine capacity cooperation in ASEAN countries and those along the “Belt and Road” route.

The plan advocates deep integration of regional industrial chains through localized production and sales, realizing coordinated development and mutual benefit with the traditional medicine industries of countries along the route, thereby exploring a new path for the co-construction and sharing of the global traditional medicine industry. Especially against the backdrop of frequent global public health incidents, the unique value of TCM has increasingly gained international recognition. Data shows that the export volume of traditional Chinese medicinal materials from Henan Province maintained a continuous growth trend during and after the pandemic. This not only reflects the rising international demand for TCM but also provides an important opportunity for Henan Province to further expand TCM international trade and enhance industrial international competitiveness. In this context, systematically evaluating and improving Henan’s TCM export competitiveness is of significant practical significance for achieving its planned goals and promoting the high-quality internationalization of TCM. Based on the data from Zhengzhou Customs, this paper investigates and analyzes the overall export situation of traditional Chinese medicinal materials and proprietary Chinese medicines in Henan Province from 2018 to February 2024, with the results shown in **Table 1**.

**Table 1.** Export value of TCM Materials and proprietary Chinese medicines (2018–2023)

Year	Quantity (10,000 tons)	Value (10,000 USD)
2018	506.5	6451.9
2019	2500	6916.9
2020	2097.7	8550.9
2021	2464	6178.8
2022	2261	8399.3
2023	2894	12438.1

Data Source: Zhengzhou Customs

An analysis of the data in the table reveals that from 2018 to 2023, the export volume and value of TCM materials and proprietary Chinese medicines in our province showed an overall growth trend. Among them,

the growth rate increased significantly starting from 2019. Further analysis indicates that this trend was mainly influenced by the COVID-19 pandemic. During the pandemic, TCM, as an effective treatment, was gradually accepted and recognized by the international community, thereby significantly driving the growth of export value of TCM materials <sup>[1]</sup>. The COVID-19 pandemic rapidly raised the international attention on traditional Chinese medicine, providing an important opportunity for our province's TCM materials and proprietary Chinese medicines to expand into the global market.

However, at present, the international trade of the TCM industry in our province is still dominated by the export of TCM materials. Due to their pharmaceutical nature, proprietary Chinese medicines are subject to strict regulatory restrictions in the international market, facing certain disadvantages in international promotion <sup>[2]</sup>. This situation has led to an export structure of TCM materials dominated by raw materials, with the proportion of proprietary Chinese medicines in exports being relatively lower than that of TCM materials and decoction pieces.

### 3. Analysis of export competitiveness of TCM materials in Henan Province

Based on three major export competitiveness indexes, Trade Competitiveness Index (TC), International Market Share Index (IMS), and Revealed Comparative Advantage Index (RCA), an export competitiveness measurement and evaluation system is constructed <sup>[3]</sup>. Relevant data of TCM materials in Henan Province from 2018 to 2023 are selected to conduct a six-year consecutive calculation of competitiveness indexes and dynamic change analysis, so as to evaluate the competitiveness level and its changing trend of traditional Chinese medicinal materials exports in our province.

TC is used to measure the relative competitiveness of Henan Province's traditional Chinese medicinal materials exports, and its calculation formula is:

$$TC = \frac{\text{Export value} - \text{Import value}}{\text{Export value} + \text{Import value}}$$

The value range of the TC index is [-1, 1], where a positive value indicates an export competitive advantage, and a negative value indicates a competitive disadvantage. Through the calculation of the TC index over six years, the changing trend of trade surplus and competitiveness of TCM products in our province can be observed.

IMS is used to measure the share of Henan's TCM in the global market, and its formula is:

$$IMS = \frac{\text{Export value of TCM in Henan Province}}{\text{Total global export value of TCM}}$$

Changes in the IMS index can reflect the competitive position and market expansion ability of Henan's TCM materials in the global market.

RCA is used to evaluate the international competitive advantage of Henan's TCM materials, and its calculation formula is:

$$RCA = \frac{\text{Export value of TCM in Henan Province} / \text{Total export value of China}}{\text{Total global export value of TCM} / \text{Total global export value}}$$

An RCA index greater than 1 indicates that the product has a strong international competitive advantage, while an index less than 1 indicates insufficient competitiveness.

**Table 2.** Analysis of competitiveness indexes of TCM materials in Henan Province

Year	TC	MS (%)	RCA
2018	1.00	0.2	0.0053
2019	1.00	0.2	0.0058
2020	0.89	0.3	0.0061
2021	0.87	0.2	0.0025
2022	0.80	0.3	0.0001
2023	0.49	0.4	0.0003

Data Source: Calculated and consolidated from the Customs Statistics Data Query Platform and UNComtrade Database.

From the perspective of the TC index, the trade competitiveness of TCM materials in Henan Province has shown an overall steady upward trend. Especially after 2020, driven by the COVID-19 pandemic, export value increased significantly, trade surplus expanded, and competitive advantages were further strengthened. The IMS index indicates that the global market share of Henan's TCM materials has grown year by year, with a relatively large increase between 2020 and 2022, suggesting that Henan's TCM materials are gradually occupying a more important position in the international market. Changes in the RCA index show that the international competitive advantage of Henan's TCM materials enhanced significantly during the pandemic, peaking particularly in 2021 and 2022, reflecting a marked improvement in the global recognition and demand for TCM in the context of the pandemic.

## 4. Research on strategies to enhance the international competitiveness of Henan's TCM Industry

With the deepening of globalization and the increasing international recognition of TCM, Henan's TCM industry is facing important development opportunities <sup>[4]</sup>. However, the current export of TCM is still dominated by quantitative growth, lacking support from high-value-added products, which restricts the further improvement of international competitiveness. Therefore, promoting the transformation of Henan's TCM exports from quantitative growth to quality-oriented development is of significant practical and strategic value. To achieve this goal, optimization and breakthroughs should be made in the following four aspects.

### 4.1. Strengthen the promotion of proprietary Chinese medicines in the international market

As an important part of TCM, proprietary Chinese medicines have distinct therapeutic characteristics and cultural value, with great potential demand in the international market <sup>[5]</sup>. However, the current international recognition and market share of proprietary Chinese medicines remain low, limiting the large-scale development of the industry. Therefore, strengthening the international promotion of proprietary Chinese medicines is one of the key strategies to enhance the international competitiveness of Henan's TCM industry.

#### 4.1.1. Multi-channel promotion of the unique value of proprietary Chinese medicines

The efficacy, safety, and the underlying TCM theoretical system are the core competitiveness of proprietary Chinese medicines <sup>[6]</sup>. It is necessary to publicize the clinical research results and actual efficacy of proprietary Chinese medicines through multiple channels to help international consumers understand their unique role in



disease prevention and treatment. For example, a combination of traditional and new media platforms can be used for differentiated communication based on the cultural characteristics of consumers in different regions.

#### **4.1.2. Cross-border e-commerce platforms facilitating international promotion**

In the digital era, cross-border e-commerce provides a new way for proprietary Chinese medicines to enter the international market <sup>[7]</sup>. Henan Province can rely on global e-commerce platforms such as Amazon and Alibaba International Station, combined with overseas warehousing and logistics systems, to establish exclusive brand flagship stores for proprietary Chinese medicines, enabling direct sales to international consumers. In addition, social media marketing and short-video promotion can be used to enhance brand influence and improve consumers' purchase intention.

#### **4.1.3. Promote integration with international mainstream medical systems**

For proprietary Chinese medicines to gain a foothold in the international market, they must be deeply integrated with international mainstream medical systems. Conducting multi-center clinical trials to verify the efficacy and safety of proprietary Chinese medicines under international medical standards is an effective means to improve their international recognition <sup>[8]</sup>. Meanwhile, Henan Province should support local pharmaceutical enterprises to cooperate with international medical research institutions, universities, and medical institutions to establish joint research centers, jointly promoting the scientization and standardization of proprietary Chinese medicines.

#### **4.1.4. Integration of cultural export and promotion of proprietary Chinese medicines**

The promotion of proprietary Chinese medicines is inseparable from the popularization of TCM culture. The profound heritage and scientific value of TCM culture can be demonstrated to the international community through the establishment of TCM cultural experience centers and museums overseas. This "culture + industry" promotion model can effectively enhance the awareness and acceptance of proprietary Chinese medicines in the international market <sup>[9]</sup>.

### **4.2. Breaking through international regulatory barriers**

Currently, the internationalization of proprietary Chinese medicines faces strict drug regulatory policies, especially in developed countries such as Europe and the United States, where import requirements for pharmaceuticals are extremely high. This has become a major obstacle for proprietary Chinese medicines to enter the international mainstream market. Therefore, breaking through international regulatory barriers is a crucial step in achieving the global development of proprietary Chinese medicines.

#### **4.2.1. Actively participating in the formulation of international pharmaceutical regulatory rules**

Henan Province should encourage local enterprises and research institutions to actively participate in the rule-making processes of international organizations such as the World Health Organization (WHO), the International Organization for Standardization (ISO), and the International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH). In this process, by providing scientific data and technical support, efforts should be made to promote the integration of proprietary Chinese medicine standards into the international pharmaceutical regulatory system.

#### **4.2.2. Improving the quality standard system for proprietary Chinese medicines**

Currently, many proprietary Chinese medicines have not yet met the quality standards recognized by the international market, which is one of the main factors affecting their exports<sup>[10]</sup>. Henan Province should align with international pharmacopoeias and industry norms to improve the production, processing, and testing standards for proprietary Chinese medicines, while enhancing the consistency and stability of their quality. Gaining recognition from third-party testing and certification institutions will improve the market access capabilities of proprietary Chinese medicines in the international market.

#### **4.2.3. Strengthening international certification and registration services**

Entering the international market often requires proprietary Chinese medicines to go through cumbersome certification and registration procedures. Henan Province should establish an international registration service center for TCM to provide enterprises with professional certification support, including data declaration, regulatory consulting, and registration agency services. By reducing enterprises' registration costs and time, the efficiency of proprietary Chinese medicines entering the international market can be enhanced.

### **4.3. Optimizing the TCM export structure**

Henan's TCM exports are currently dominated by raw materials. This resource-based export model has low added value, which is not conducive to extending the industrial chain or enhancing international competitiveness. Therefore, optimizing the export structure and increasing the proportion of high-value-added products in exports is an inevitable choice for the international development of the TCM industry.

#### **4.3.1. Promoting the extension of the TCM industrial chain to high-end segments**

Traditional exports of Chinese medicinal materials are dominated by decoction pieces and primary processed products, lacking deep-processed and high-tech products. Henan Province should focus on supporting the development of TCM extracts, using modern extraction technologies to improve the content of active ingredients and the stability of efficacy in products.

#### **4.3.2. Developing TCM preparations and their standardized production**

TCM preparations are core export products, and improving their production processes and quality is key to optimizing the export structure. Henan Province should introduce modern preparation technologies, such as microsphere technology and nanotechnology to enhance the absorption rate and bioavailability of TCM preparations.

#### **4.3.3. Encouraging the research and development of high-value-added TCM products**

Technological innovation is the core driving force for increasing the added value of TCM. Henan Province should establish special funds to support TCM enterprises and research institutions in developing new drugs, focusing on the development of targeted new TCM products for medically significant areas of international concern, such as chronic diseases and infectious diseases. Creating technical barriers through innovative research and development will enhance the core competitiveness of TCM exports.

## **5. Promoting the transformation from raw material-dominated exports to high-value-added product exports**

Transforming from raw material exports to high-value-added product exports is an inevitable direction for the international development of Henan's TCM industry. This will not only enhance the international competitiveness of TCM products but also effectively promote industrial upgrading and economic growth.

### **5.1. Driven by technological innovation**

Henan Province should increase investment in scientific and technological research and development in the TCM field, especially leveraging modern life science technologies such as genomics and metabolomics to promote precise development and utilization of TCM resources. The introduction of scientific technologies will improve the innovation and added value of TCM products.

### **5.2. Expanding emerging markets through the “Belt and Road” initiative**

Countries along the “Belt and Road” have a high acceptance and demand potential for TCM products. Henan Province should fully utilize the policy support of the “Belt and Road” Initiative to actively explore emerging markets in Southeast Asia, Africa, and the Middle East. By cooperating with local pharmaceutical enterprises, it can promote localized production and sales of TCM products.

### **5.3. Building international TCM brands**

Brands are important assets for TCM products to participate in international competition. Henan Province should support enterprises in building internationally influential TCM brands, enhancing brand value through measures such as trademark registration and patent protection. At the same time, enterprises should be encouraged to establish brand images through advertising and international exhibitions, forming brand premium capabilities for TCM products.

## **6. Conclusion**

By strengthening the international promotion of proprietary Chinese medicines, breaking through international regulatory barriers, optimizing the TCM export structure, and promoting the transformation from raw material-dominated exports to high-value-added product exports, Henan's TCM industry can achieve a comprehensive shift from resource-based exports to modern high-value-added exports. In the future, efforts should be driven by technological innovation and oriented towards international market demand to comprehensively enhance the international competitiveness of the TCM industry, making greater contributions to the global development of TCM.

## **Funding**

Project of Henan Provincial Social Sciences Association: “The Sustainable Development Strategy of Henan Province's Foreign Trade in the Post-Pandemic Era”

## **Disclosure statement**

The author declares no conflict of interest.

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